PSYCHOANALYTIC RESEARCH: PROGRESS AND PROCESS

NOTES FROM ALLAN SCHORE'S GROUPS IN DEVELOPMENTAL AFFECTIVE NEUROSCIENCE AND CLINICAL PRACTICE

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A significant expression of the current paradigm shift in psychoanalysis and related disciplines is the expansion of clinically relevant models that link the unconscious processes of the mind with the nonconscious operations of the body. Formerly relegated to the shadowy realm of metapsychology, redefined psychoanalytic concepts that integrate mind and body are now informed by advances in our understanding of the psychology and biology of bodily-based emotional states. Updated neuropsychoanalytic constructs that bypass "Descartes' error" along with developmental psychoanalytic discoveries of how affect regulating attachment experiences positively and negatively impact evolving structure are being incorporated into more complex clinical models of the psychopathogenesis and treatment of brain/mind/body disorders. And so there is a growing interest in creating therapeutic models that are grounded in developmentally-based psychoanalytic relational concepts, neuropsychoanalytic data of psychic structure, and clinical psychoanalytic observations of the psychosomatic expressions of bodily experiences embedded in a broad variety of psychopathological and intersubjective phenomena.

In my own work I have suggested that intersubjectivity, an essential construct of current developmental, clinical, and neuropsychoanalysis, is more than a match or communication of cognitions, and that the intersubjective field co-constructed by two individuals includes not just two minds but two bodies (Schore, 1994, 2003a,b). Throughout the lifespan the fundamental elements of intersubjective communications embedded in affectively charged attachment transactions are more than mental contents; rather they are psychobiological states. Internal working models of attachment, acting at nonconscious levels, encode strategies of affect state and arousal regulation, and therefore such early imprinted right brain representations store and process critical information about the mind and *body* of self and other. Attachment theory, an outgrowth of psychoanalysis, is thus a theory of psychoneurobiological regulation, especially of the right brain, the locus of the corporeal self (Devinsky, 2000) and the highest and most complex regulatory systems of the organism (Schore, 1994). The essential biological purpose of intersubjective communications is thus the regulation of brain/mind/body states.

This principle is echoed in Pipp and Harmon's description of attachment as regulation: "it may be that throughout the lifespan we are biologically connected to those with whom we have close relationships…[H]omeostatic regulation between members of a dyad is a stable aspect of all intimate relationships throughout the lifespan" (1987, p. 651). These implicit (nonconscious) bidirectional right brain/right mind/body nonverbal communications also occur within the therapeutic relationship (Schore, 1994, 2003b). Meares describes, "Not only is the therapist being unconsciously influenced by a series of slight and, in some cases, subliminal signals, so also is the patient. Details of the therapist's posture, gaze, tone of voice, even respiration, are recorded and processed. A sophisticated therapist may use this processing in a beneficial way, potentiating a change in the patient's state without, or in addition to, the use of words" (2005, p. 124).

For many years the realm of implicit nonverbal communications and bodily-based affective states has been devalued or ignored by mainstream psychoanalysis, which has overemphasized explicit verbal cognitive mechanisms (Schore, 1994). On the other hand, nonverbal interventions have continued to be explored by somatic psychotherapies. Until recently body psychotherapy, originally a product of certain pioneers of classical psychoanalysis and trauma theory has progressed independently and somewhat apart from contemporary psychoanalysis. This field has focused more intensely on the somatic expressions of psychobiological trauma, especially early forming trauma and affect dysregulation that occurs in the histories of severe self pathologies. But the body psychotherapies are also now adopting an interdisciplinary perspective. This shared common interest in current psychoneurobiological data on brain/mind/body systems is thus forging a renewed dialogue between formerly exclusively psychoanalytic models of the mind and somatic therapeutic models of the body. Both are now converging on the problem of trauma and arousal dysregulation, especially right brain attachment trauma that negatively impacts mind and body, psyche and soma (Schore, 2002).

Pat Ogden and her colleagues are one of the most creative and prominent sources of neurobiologically, psychodynamically, and developmentally informed clinical models in the expanding world of somatically-focused psychotherapy. Pat is working closely with not only major figures in traumatology but also in neuropsychoanalysis and affective neuroscience. We first met after a presentation I gave at Bessel van der Kolk's trauma conference in 1999, where she began to apply my ideas about interactive psychobiological regulation of arousal within the therapeutic alliance to the treatment of acute and chronic trauma. The following essay on the incorporation of intersubjective-relational and arousal regulatory principles into sensorimotor psychotherapy is extrapolated from an upcoming book, *Trauma and the Body: The Theory and Practice of Sensorimotor Psychotherapy*

(WW Norton). Below Ogden and her associates convincingly argue that insight and words play limited roles in the treatment of trauma, and offer a therapeutic model that effectively integrates both top-down and bottom-up interventions.

This assertion reflects my own position on working with patients with early relational trauma, and is now being articulated by a number of others. In the current issue of the *International Journal of Psychoanalysis* Andrade, citing information now coming from neuropsychoanalysis concludes "As a primary factor in psychic change, interpretation is limited in effectiveness to pathologies arising from the verbal phase related to explicit memories, with no effect in the pre-verbal phase where implicit memories are to be found" (p. 677). This conceptualization reflects the current paradigm shift in psychoanalytic conceptualizations of the change mechanism, a change in both function and structural organization. Very recent models of therapeutic change thus describe more complex development of the unconscious processes of the implicit mind and more flexible and resilient nonconscious operations of right brain systems that regulate the body (Schore, 2003b). In addition, ongoing research In affective neuroscience and neuropsychiatry is now describing the enduring negative impact of preverbal attachment trauma on early forming right brain systems that implicitly process intersubjective and bodily-based information (Schore, 2003a). In light of these advances in knowledge, Ogden's theoretically well-grounded yet highly practical clinical contributions are timely and important.

In closing, I refer the reader to a new publication (Schore, 2005) that delivers advances in regulation theory to practicing pediatricians. A 3-page schematic of Schore's model of affect regulation and right brain development appears in the June online edition of *Pediatrics In Review*.

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Including the Body in Mainstream Psychotherapy for Traumatized Individuals

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Psychotherapists who have been trained in models of psychodynamic, psychoanalytic, or cognitive therapeutic approaches are skilled at listening to the language and affect of the client. They track the clients' associations, fantasies, and signs of psychic conflict, distress, and defenses. They register the various narrative threads clients bring, bearing in mind how and where the childhood story repeats itself in the present. They are skilled in creating the therapeutic alliance, working within a therapeutic frame, and recognizing transference and countertransference nuances and enactments. They monitor physical symptoms, using psychopharmacological interventions when indicated. And they invariably take note of the physical presentation of their clients, such as the mannerisms, subtle changes in weight or choice of clothing, the slumped posture of a depressed client; or agitated movements of an anxious client.

Yet while the vast majority of therapists are trained to notice the appearance and even the movements of the client's body, we suggest that a thoughtful engagement with the client's embodied experience is largely peripheral to traditional therapeutic formulation, treatment plan, and interventions. The body, for a host of reasons, has been left out of the "talking cure." Sensorimotor psychotherapy is an approach that builds on traditional psychotherapeutic understanding but also includes the body as central in the therapeutic field of awareness and employs a set of observational skills, theories, and interventions not usually practiced in psychodynamic psychotherapy. The premise of this paper is that, by adding these body-oriented approaches to their repertoire, traditionally trained therapists, can increase the depth and efficacy of their clinical work.

We now know that trauma has profound effects on the body and nervous system and that many symptoms of traumatized individuals are somatically driven (van der Kolk, McFarlane, & Weisaeth, 1996). Clients suffering from unresolved trauma nearly always report unregulated body experience: an uncontrollable cascade of unmanageable strong emotions and physical experiences, triggered by reminders of the traumatic

event, replays endlessly in the body. It is often this chronic physiological arousal that is at the root of recurring posttraumatic symptoms for which the client seeks therapy. The capacity to assimilate the traumatic experience within the life narrative is not yet available to such individuals, both because traumatic memories are encoded subcortically, rather than in autobiographical memory, and because the recurring traumatic activation continues to create a somatic sense of threat, or "speechless terror" (van der Kolk, 1996; Siegel, 1999).

Top Down And Bottom Up Interventions

In the face of post-traumatic flooding, despair, self-loathing, and autonomic dysregulation, all therapists, regardless of theoretical orientation, try to assist patients to become more stable physiologically, emotionally, and functionally. And although viewpoints differ about the best method to help resolve the psychological and physical sequelae of trauma, most therapists agree that sooner or later, once stability is achieved, most patients need to directly confront their traumatic experience in order to bring closure to find words to describe the fearful experiences they have undergone and to understand why these experiences remain so uncomfortably registered in their inner landscape.

One principle of psychodynamic models of psychotherapy, stated simplistically, is that successfully facilitating affective connection to painful past experience, and addressing the accompanying cognitive distortions, within the context of a therapeutic relationship will bring about a change in belief and sense of self and thereby a relief of suffering and improvement in well-being. Another way to state this is that traditional therapeutic models are based primarily on the idea that change occurs through a process of narrative expression and formulation in a "top-down" manner. The working premise is that a significant change in the *cognitions and emotions* of a client effects change in the physical or embodied experience of the client's sense of self. The prime target is therefore the patient's *language*; that is, the narrative is the entry point into the therapeutic process. The patient's words reveal "internal working models, "internalized relational templates of self and other "(Bowlby, 1969). Through the client's verbal representation, beliefs and affects are engaged, explored, and reworked through the therapeutic relationship.

Clearly, learning top-down management skills, clarifying meaning, formulating a narrative, and working with emotional experience are fundamentally helpful and accomplish real gains for the client. To these already useful cognitive and dynamic practices and techniques, we propose the addition of "bottom-up" interventions that address the repetitive, unbidden, *physical* sensations, movement inhibitions, and somatosensory intrusions of unresolved trauma. Traumatized clients are haunted by the return of trauma-related sensorimotor reactions in such forms as intrusive images, sounds, smells, body sensations, physical pain, constriction, numbing, and the inability to modulate arousal. By including the body as a primary entry point in processing trauma, sensorimotor psychotherapy teaches therapists to work directly with the body to affect these symptoms and promote change in the cognitions, emotions, belief systems, and capacity for relatedness in the client (Bakal, 1999; Ogden & Minton, 2000). It is important to note that we find bottom-up interventions alone to be insufficient, and thus we propose a synthesis of somatic with traditional top-down, cognitive approaches.

The encompassing aim of using both top-down and bottom-up interventions is not only to alleviate symptoms and resolve the traumatic past, but also to help clients experience a reorganized sense of self. The sense of self emerges not only in the context of beliefs, metaphors, and emotional responses but also out of the physical organization of the body. Some traumatized patients have an habitually collapsed, frozen, or immobilized body and an accompanying sense of self as ineffectual. Others have hyperaroused, affect-dysregulated bodies and a sense of a self that seems "out of control." Sensorimotor psychotherapy helps these clients to regulate their physical experiences so that the corresponding sense of self *feels* grounded, competent, and oriented toward present experience. As the organization of the body changes in terms of movement, posture, and arousal level, so a different, more positive, sense of self emerges, when supported by these physical changes. For example, a client might realize that the slump in his spine has served to maintain feelings of inferiority and helplessness. As he addresses this issue somatically, cognitively, and emotionally, his posture may gradually grow to be more erect, becoming a physical resource that supports his well being and competency.

The Invisibility Of The Body

Although the chronic somatically-based upheavals of unresolved trauma usually form the basis of the client's distress, the body often remains strangely "invisible" to both therapist and client. We have already noted that traditional psychotherapies pay scant attention to the physical experience of the client in treatment, in part because there is little theory or training to assist in the consideration of the embodied experience of trauma. Another possible reason for the "invisibility" of the client's somatic distress is that PTSD is characterized not only by the hyperarousal-related re-experiencing of the original trauma but equally by hypoarousal-related avoidance and numbing of experience. Thus, PTSD is a disorder of "too little," as well as "too much:" the biphasic and episodic pattern that has been described by van der Kolk, et al. (1996) and Post et al., (1997). For example, a client who has been held up at gunpoint might become suddenly dysregulated upon seeing a poster advertising guns. He might find himself feeling "too much," for example, anxious, overly vigilant, autonomically activated, and edgy. Or, he might experience "too little," for example, a sense of emotional emptiness and numbed separation from the body. In either condition, the individual is unable to appropriately regulate emotional and physical responses to

While hypoarousal is equally as disabling and debilitating as hyperarousal, it is marked by deficits and thus can be easily overlooked by the therapist. It might manifest as numbing; dulling of inner body sensation; alexithymia; a loss of somatic capacities, such as impaired pain responses and intermittent motor inhibitions (Janet, 1898, Kardiner 1941, van der Kolk & van der Hart 1991), or a slowing of musculoskeletal response and diminished muscular tone, especially in the face (Porges, 1995). In the therapy office, hypoarousal may be subsumed under depression, lack of energy, or general debilitation and not be recognized as a bodily response re-evoked by reminders of trauma. In addition, chronically traumatized clients often develop a capacity to "hide in full sight": the client has learned to disguise and minimize his/her distress and continues to do so in the therapy office. For all of these reasons, it is easy for therapists to underestimate or miss completely the distress of the still, inhibited, or hypoaroused client who could seem to us bored, depressed, or tired.

Another source of the invisibility of the physical encoding of trauma relates to habitual posture and repetitive patterns of movement that influence thinking. The body's chronic patterns of organization can be viewed as the physical reflection of beliefs, self-esteem, and relative degree of mastery. For example, one patient's early childhood experience hindered the development of assertion and confidence, his body reflected that history: his chest is sunken down, his arms hang limply, and his breath is shallow. This chronic posture then serves to sustain certain beliefs: thoughts of self assertion and competency are much less likely in such a posture than if the chest is lifted, the arms energized, and the breath full.

Sensorimotor Psychotherapy

The practice of sensorimotor psychotherapy blends theory and technique from cognitive and dynamic therapy with straightforward physical interventions, such as helping clients to become aware of the body, track bodily sensations, and implement physical actions that promote empowerment and success. Clients are taught to become aware of the relationship between their body's organization and their beliefs and emotions by noticing how a self-representation such as "I'm a bad person" affects physical organization, and how the words and content they describe in the here-and-now of therapy affect their physical sensation and movements. Such interventions help to unify body and mind in the treatment of trauma and provide clients with the additional means of using the body as an aid in overcoming past trauma. Within the context of a relationally attuned therapy, clinicians can help clients become curious and interested in the body's sensations and feelings, especially how their physical response to historical trauma continues in their present life. These somatic, bottom-up interventions in turn can provide a valuable additional approach to promoting the same goals as the traditional psychotherapies.

In much the same way that clients who come to therapy with unresolved grief learn to identify and experience the grief, clients who exhibit unresolved sensorimotor reactions learn to identify and experience these reactions *physically*. As clients become skillful at observing and tracking the sometimes-disturbing body experiences, these physical experiences, like the experience of grief, can often find their own expression and resolution. As their body's sensations are recognized and followed mindfully by the client, it becomes possible for the body itself to lead the client into a necessary resolution and calming of the physical experience.

For example, a Vietnam veteran came to therapy to "get rid of" his nightmares and feelings of being chronically emotionally overwhelmed. In the course of sensorimotor psychotherapy, he learned to sense his physiological arousal as he experienced it in his body. He learned to pay active attention to his rapid heart rate and the shaking and trembling that he first experienced following the original combat and then re-experienced all too frequently in his daily life years later. Over several therapy sessions, he learned to describe his inner body sensations, noting the tingling in his arms that occurred prior to the shaking, the slight acceleration in heart rate, and the increase of tension in his legs. As his capacity to observe and describe his subjective bodily sensations developed, he gradually learned to accept these sensations without trying to inhibit them. The therapist instructed him to simply track these sensations as they changed, or "sequenced." When clients become aware of such internal sensations, the sensations themselves usually transform into ones that are more tolerable (Levine 1997). This client learned to track mindfully the sequence of sensations as it progressed through his body until the sensations themselves settled down. He noticed that his shaking gradually became quiet, his heart rate eventually returned to baseline, and the tension in his legs released on its own.

This approach is quite similar to the traditional psychotherapeutic approach of bringing the avoided wish or fear into the client's full attention under the guidance of an accepting, safe therapist. In both cases, this focusing of attention on the avoided thought or emotion may be sufficient in itself to desensitize the anticipation of it. In the aforementioned example of sensorimotor psychotherapy with a Vietnam veteran, increasing the mindful observation of his disturbing physical sensations and experiences caused a receding and then, eventually, a diminishing in their intensity and frequency. Such reductions of distressing body-based symptoms and the increased capacity for tracking body sensation help clients become increasingly able to work with other elements of trauma, such as attachment, meaning-making, and dissociative patterns that were previously overshadowed by dysregulated bodily states.

In both psychodynamic and sensorimotor approaches, the therapist acts as an "auxiliary cortex" (Diamond et all, 1963) and "affect regulator of the patient's dysregulated states in order to provide a growth-facilitating environment for the patient's immature affect-regulating structures" (Schore, 2001). As Schore observes, the therapist's "interactive regu

lation of the patient's state enables him or her to begin to verbally label the affective [and sensorimotor] experience" (Schore, 2002). Interactive psychobiological regulation (Schore 1994) provides the relational context under which the client can safely contact, describe and eventually regulate inner experience. The therapist tracks the client's communications, slowing and adjusting the pace and process of therapy and exploring which interventions best help return the client's arousal to the window of tolerance.

Through interactive regulation, clients are taught to use the mind to increase awareness of body sensations as they fluctuate in texture, quality, and intensity. The therapist teaches the clients to differentiate between words that describe emotional states, such as panic and terror, and words for bodily experience, such as hot or frozen or churning. In this way, clients are encouraged to learn the language of their own movement and sensations, first via the therapeutic interaction, as the therapist observes and names what is happening physically, and subsequently as clients themselves notice movements and sensations without prompting by the therapist. Through cultivating the ability to form accurate verbal descriptions of their physical experiences, clients expand their perception and processing of physical feelings in much the same way that familiarity with a variety of words that describe emotion aids in the perception and processing of emotions. The capacity to use precise language helps to uncouple trauma-based emotions from body sensations and develop the client's skill tracking bodily sensations that accompany arousal, such as trembling, as distinct from emotions, such as panic, until the sensations themselves settle down. This skill often serves to quiet the emotion as well.

Top-down, cortically mediated techniques are harnessed to *observe and facilitate* sensorimotor processing. Clients are taught to mindfully observe and then describe the interplay of physical sensations, movements, and impulses, noticing their internal reactions as they try out new physical actions. They also learn to observe the effects of thoughts and emotions on the body: noticing in which part of the body they feel the impact of a particular thought or how the body organizes a particular emotion. While traumatic threat inhibits activity of the prefrontal cortex (Schore, 1994; van der Kolk et al., 1996; LeDoux 2002,), resulting in "speechless terror" (van der Kolk et al., 1996), mindful observation re-engages the prefrontal cortex. Clinically, sensorimotor practitioners observe a mitigation of autonomic dysregulation as the client becomes more adept at self-observation, raising the question of whether mindfulness serves to engage the right orbital prefrontal cortex in regulating arousal (Schore, 1994).

Failed Physical Defenses

In addition to noticing arousal levels and their accompanying sensations, patients learn to observe physical action and impulses to action, Individuals who have been subjected to overwhelming fear and danger may have had active attempts to spare themselves thwarted by overwhelming odds. These truncated or uncompleted actions of defense often subsequently manifest as chronic symptoms. As Herman (1992, p. 34) states, "Each component of the ordinary response to danger, having lost its utility, tends to persist in an altered and exaggerated state long after the actual danger is over." If a person is endangered, experiences the instinct to fight or flee, but is unable to execute these actions, this previously activated but never completed sequence of possible defensive actions may persist in distorted forms, such as muscles held in a chronically tightened pattern, heightened and unstable aggressive impulses, or a chronic lack of tone or sensation in a particular muscle group. Many, if not most, traumatized patients come to therapy exhibiting chronic immobilizing defensive tendencies, ranging from physiological and psychological passivity to hyperactive but ineffective aggression.

In sensorimotor psychotherapy, these patients are helped to rediscover these truncated impulses to action through tracking the bodily movements and sensations that emerge during the therapy session. In one case, a client who submitted to her father's sexual abuse as a child in therapy discovered her forgotten, dormant impulse to push away, run away, and protect herself. Witnessing and engaging her body's responses to her traumatic past revealed these actions. She became aware of the previously aborted physical urge to push her father away and also run away. As she mindfully re-experienced how her body submitted and did not resist her father during the abuse, she also found that her body *wanted* to fight him and run, experienced in the physical tension of her arms, and a feeling of energy in her legs. These physical impulses that she did not, could not, act upon at the time of the abuse appeared spontaneously as she became meticulously aware of her physical sensations and impulses to action while remembering the abuse. The lost impulses to resist had become encoded not only in praxis of submission, but also as a belief: "I don't deserve to defend myself."

As this case illustrates, unresolved trauma seems to insidiously predict the individual's future: before the future has happened, it has been prescribed as hopeless by the past. Until our abused client could experience the satisfaction of performing a defensive action, her future seemed to her as if it held only further abuse and disappointment. But as we help a client consciously distinguish the possible physical action from the actual physical response to the original trauma, these new actions can become explicit, conscious, and available to the client, and the future often begins to hold more promise. Rather than insight alone, it is the patient's experience of empowering action in the context of safety provided by a background of the empathic clinician's psychobiologically attuned interactive affect regulation that helps effect such change.

Practicing New Actions

Empowering actions, such as motor defenses, are not the only physical actions that might be absent in a client's current physi

cal vernacular. Each person's body has actions that are "easy" or familiar, as well as actions that are not (Janet, 1925). A client who was neglected as a child, for example, experienced the action of reaching out towards the therapist as both unfamiliar and hopeless, saying, "No one was ever there for me, and you won't respond either." Exploring this action, along with its accompanying beliefs, served as an inroad to addressing her attachment disturbances. Another client could not bring himself to "stand tall:" his mother was the only one who could be "big" in his family, so he had to keep himself small. Yet another client experienced difficulty when invited to explore the action of walking towards the therapist, saying that she could not initiate physical proximity because, as a child, her overtures were typically rejected. In all these situations, practicing the simple physical actions that are challenging for the client and dealing with the accompanying cognitive and emotional responses, as well as memories that spontaneously come up, can help develop competencies that were previously unavailable.

Practicing these new physical actions is designed to foster the experience of possibility: the possibility of physical and mental change, the possibility of successful defense, or adequate resources, or sufficient resilience, or the possibility that it could have been otherwise. For example, if a woman who was forced to submit in an assault is assisted in therapy to "try out" the movements involved in a physically defensive gesture of pushing away and addressing the affects and cognitive schemata that emerges while doing so, she might open up possibilities of thought or responses hitherto suppressed. As she mindfully observes what happens when she engages her body in a mobilizing defensive posture, she also might become aware of guilt or shame arising from her inability to implement such actions during the actual trauma.

Not only does the body find new options of defense and posture, but also entrenched beliefs and habits of thought and emotions begin to respond to the different physical actions. Since beliefs, cognitive distortions and emotions also condition physical experience and actions, clients are also encouraged to notice how a belief such as "I'm bad" might be reflected in the body—perhaps in a droopiness through the spine, a nodding downward of the head, and tension in the buttocks. A different belief, such as "I should do what others want," can interrupt an individual's impulse to respond to her own needs or wants, and instead she might enact a type of obedience or compliance that is characterized by slow, mechanical, expressionless body movements. Such beliefs can be addressed directly through the body as well as through the mind. Interventions in such a case might involve not only insight and awareness, but also changing the way the body moves to include more expression and spontaneity.

Changing Procedural Learning

Current theories in brain research emphasize that we learn procedurally; that the brain changes as a result of direct experience (Grigsby & Stevens, 2000). If this is true, a "talk therapy" approach that emphasizes insight without addressing bodily experience may have a limited potential to effect actual change in long-standing problems. Procedural learning refers to the learning of *processes*, such as motor skills and perceptual abilities (Grigsby & Stevens, 2000; Solomon & Siegel, 2003). As a result of procedural learning, people form habits of behavior that become automatic, economical ways of functioning. The unsatisfying repetitive patterns that are the complaints of so many clients are long-term ingrained procedural habits of relating to themselves, others, and the world. Practitioners of sensorimotor psychotherapy try to interrupt these procedurally-learned, automatic actions of their clients, first by bringing these patterns to awareness through experience rather than insight alone, and second by exploring and practicing new actions, as illustrated above.

Thus, the process of sensorimotor psychotherapy requires the mindful observation of the patient's body by the therapist, as well as the engagement of the patient in awareness of the body, as a way of bringing to light the interconnection between the body, emotions, and beliefs. By maintaining a slow, thoughtful pace and attending to the patient's ability to regulate arousal, sensorimotor psychotherapists work to avoid abreactions and keep at bay the hyperarousal responses that inhibit the ability the ability to think and attend (LeDoux, 2002). Clients with complex trauma can be triggered easily by interventions that bring up traumatic physical reactions too quickly; therefore, pacing, timing, and safe, gradual re-con

nection with the body are of utmost importance. For example, if a patient's heart rate increases when he begins to describe his trauma, the telling is suspended while therapist and client focus together on the inner body sensation until the heart rate slows. Only then does the client continue with the narrative. In this way, arousal is kept within the window of tolerance (Siegel 1999), so that it may be processed and integrated. This technique builds the client's confidence that he or she can process trauma without being overwhelmed or flooded with disturbing physical, emotional, or cognitive responses.

Conclusion

While words are indispensable in the treatment of trauma, they cannot substitute for the meticulous observation of how a patient attempted to defend herself or how such physical defenses were thwarted during the original traumatic event. Nor can words take the place of thoughtful therapeutic facilitation of actual experiences of empowering physical defensive action, impossible during the actual trauma of the past. We propose that the satisfaction and pleasure of finally being able to perform direct physical defensive actions emerging spontaneously from the observation of trauma-related body experience alters the somatic sense of self in a way that talking alone does not. Knowing, feeling, and doing—and thus experiencing—these physical actions helps to transmute the way in which clients consciously and unconsciously hold and organize past traumas. It changes the way they respond (cognitively, emotionally, and physically) in their current lives and the way they envision the future. We believe that the judicious addition of bottom up interventions to traditional trauma treatments can assist in the resolution of unresolved trauma and help to resolve the chronic effects of the affect storms caused by hyper and hypoarousal states. By integrating these bottom-up interventions with top-down approaches, we hope to combine the best of both worlds to help chronically traumatized clients find resolution and meaning in their lives.

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cal vernacular. Each person's body has actions that are "easy" or familiar, as well as actions that are not (Janet, 1925). A client who was neglected as a child, for example, experienced the action of reaching out towards the therapist as both unfamiliar and hopeless, saying, "No one was ever there for me, and you won't respond either." Exploring this action, along with its accompanying beliefs, served as an inroad to addressing her attachment disturbances. Another client could not bring himself to "stand tall:" his mother was the only one who could be "big" in his family, so he had to keep himself small. Yet another client experienced difficulty when invited to explore the action of walking towards the therapist, saying that she could not initiate physical proximity because, as a child, her overtures were typically rejected. In all these situations, practicing the simple physical actions that are challenging for the client and dealing with the accompanying cognitive and emotional responses, as well as memories that spontaneously come up, can help develop competencies that were previously unavailable.

Practicing these new physical actions is designed to foster the experience of possibility: the possibility of physical and mental change, the possibility of successful defense, or adequate resources, or sufficient resilience, or the possibility that it could have been otherwise. For example, if a woman who was forced to submit in an assault is assisted in therapy to "try out" the movements involved in a physically defensive gesture of pushing away and addressing the affects and cognitive schemata that emerges while doing so, she might open up possibilities of thought or responses hitherto suppressed. As she mindfully observes what happens when she engages her body in a mobilizing defensive posture, she also might become aware of guilt or shame arising from her inability to implement such actions during the actual trauma.

Not only does the body find new options of defense and posture, but also entrenched beliefs and habits of thought and emotions begin to respond to the different physical actions. Since beliefs, cognitive distortions and emotions also condition physical experience and actions, clients are also encouraged to notice how a belief such as "I'm bad" might be reflected in the body—perhaps in a droopiness through the spine, a nodding downward of the head, and tension in the buttocks. A different belief, such as "I should do what others want," can interrupt an individual's impulse to respond to her own needs or wants, and instead she might enact a type of obedience or compliance that is characterized by slow, mechanical, expressionless body movements. Such beliefs can be addressed directly through the body as well as through the mind. Interventions in such a case might involve not only insight and awareness, but also changing the way the body moves to include more expression and spontaneity.

Changing Procedural Learning

Current theories in brain research emphasize that we learn procedurally; that the brain changes as a result of direct experience (Grigsby & Stevens, 2000). If this is true, a "talk therapy" approach that emphasizes insight without addressing bodily experience may have a limited potential to effect actual change in long-standing problems. Procedural learning refers to the learning of *processes*, such as motor skills and perceptual abilities (Grigsby & Stevens, 2000; Solomon & Siegel, 2003). As a result of procedural learning, people form habits of behavior that become automatic, economical ways of functioning. The unsatisfying repetitive patterns that are the complaints of so many clients are long-term ingrained procedural habits of relating to themselves, others, and the world. Practitioners of sensorimotor psychotherapy try to interrupt these procedurally-learned, automatic actions of their clients, first by bringing these patterns to awareness through experience rather than insight alone, and second by exploring and practicing new actions, as illustrated above.

Thus, the process of sensorimotor psychotherapy requires the mindful observation of the patient's body by the therapist, as well as the engagement of the patient in awareness of the body, as a way of bringing to light the interconnection between the body, emotions, and beliefs. By maintaining a slow, thoughtful pace and attending to the patient's ability to regulate arousal, sensorimotor psychotherapists work to avoid abreactions and keep at bay the hyperarousal responses that inhibit the ability the ability to think and attend (LeDoux, 2002). Clients with complex trauma can be triggered easily by interventions that bring up traumatic physical reactions too quickly; therefore, pacing, timing, and safe, gradual re-con